

Notice of Allowability

Application No.

10/520,899

Examiner

Thomas K. Pham

Applicant(s)

SERIZAWA, KAZUAKI

Art Unit

2121

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to original application filed 01/10/2005.
2. ☒ The allowed claim(s) is/are 1,2 and 6-20.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☒ All b) ☐ Some* c) ☐ None of the:
 1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit
of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413),
Paper No./Mail Date _____
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____

Reasons for Allowance

1. Claims 1, 2, and 6-20 are allowed.
2. The following is an examiner's statement of reasons for allowance:

While Bieg et al. (U.S. Patent No. 6,668,466 - hereinafter Bieg-466) discloses a highly accurate articulated coordinate measuring machine comprising a revolute joint, a circular encoder wheel, having an axis of rotation; a plurality of marks disposed around at least a portion of circumference of the encoder wheel; bearing means for supporting the encoder wheel, while permitting free rotation of the encoder wheel about the wheel's axis of rotation; a probe arm, having a distal end with a probe tip attached thereto; coordinate processing means, operatively connected to a sensor, for converting the output of the sensor into a set of cylindrical coordinates representing the position of the probe tip relative to a reference cylindrical coordinate system. Bieg-466 does not teach a spreadsheet software unit that describes noncircular part shape data defined by a longitudinal coordinate on an axis of a workpiece, an angular coordinate corresponding to the longitudinal coordinate, and a radial coordinate corresponding to the angular coordinate in a form of matrix data in a machining data sheet, and describes shape-data-describing-are-specifying data that specifies a cell region in which the matrix data is entered, and machining condition data that specifies machining conditions for shaping the noncircular part of the piston, after directives in the machining data sheet; and other limitations related to these features in combination with the remaining elements and features of the claimed invention.

And Bieg et al. (U.S. Patent No. 6,519,860 - hereinafter Bieg-860) discloses independently evaluating the spatial positional performance of a machine having a movable member, comprising an articulated coordinate measuring machine comprising: a first revolute

joint; a probe arm, having a proximal end rigidly attached thereto, wherein the probe tip is pivotally mounted to the movable machine member; a second revolute joint; a first support arm serially connecting the first joint to the second joint; and coordinate processing means, operatively connected to the first and second revolute joints, for calculating the spatial coordinates of the probe tip; means for kinematically constraining the articulated coordinate measuring machine to a working surface; and comparator means, in operative associate with the coordinate processing means and with the movable machine, for comparing the true position of the movable machine member, as measured by the true position of the probe tip, with the desired position of the movable machine member. Bieg-860 does not teach a spreadsheet software unit that describes noncircular part shape data defined by a longitudinal coordinate on an axis of a workpiece, an angular coordinate corresponding to the longitudinal coordinate, and a radial coordinate corresponding to the angular coordinate in a form of matrix data in a machining data sheet, and describes shape-data-describing-are-specifying data that specifies a cell region in which the matrix data is entered, and machining condition data that specifies machining conditions for shaping the noncircular part of the piston, after directives in the machining data sheet; and other limitations related to these features in combination with the remaining elements and features of the claimed invention.

The prior art of record fails to teach or fairly suggest to one of ordinary skill in the art at the time of the invention, in conjunction with all the other claimed limitations, a machining data generator for generating machining data for shaping an external shape of a piston having all the claimed features of applicant's instant invention, specifically including: a spreadsheet software unit that describes noncircular part shape data defined by a longitudinal coordinate on an axis of

Art Unit: 2121

a workpiece, an angular coordinate corresponding to the longitudinal coordinate, and a radial coordinate corresponding to the angular coordinate in a form of matrix data in a machining data sheet, and describes shape-data-describing-are-specifying data that specifies a cell region in which the matrix data is entered, and machining condition data that specifies machining conditions for shaping the noncircular part of the piston, after directives in the machining data sheet, etc., as set forth in the claims.

Also, there is no motivation to combine the Bieg-466 reference with the Bieg-860 reference to meet these limitations. It is for these reasons that applicant's invention defines over the prior art of record.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Art Unit: 2121

Any inquiry concerning this communication or earlier communications from the examiner should be directed to examiner *Thomas Pham*; whose telephone number is (571) 272-3689, Monday to Thursday from 6:30 AM - 5:00 PM EST or contact Supervisor *Mr. Anthony Knight* at (571) 272-3687.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Thomas Pham

Patent Examiner

A handwritten signature in black ink, appearing to read 'Thy Pham', written in a cursive style.

November 10, 2006